🌍 Lesson Plan: Plate Tectonics

Grade Level: 6
Subject: Earth Science
Duration: 45–60 min
NGSS MS-ESS2-3: Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.

🎯 Learning Objectives

By the end of this lesson, students will be able to:

- **Identify** the major tectonic plates and describe their locations on Earth.
- **Explain** the three main types of plate boundaries and the geological features associated with each.

other, often forming mid-ocean ridges or rift valleys.
- **Convergent Boundary:** A plate boundary where two tectonic plates move toward each other, often forming mountain ranges, ocean trenches, or volcanic arcs.
- **Transform Boundary:** A plate boundary where two tectonic plates slide past each other horizontally, often causing earthquakes.
- **Convection Currents:** Circular motions in Earth's mantle caused by the rising and falling of mantle material undergoing changes in temperature and density, driving plate movement.

💼 Materials Needed: (all links are included in this PDF)

- Printed copies of Worksheet 0 (Earth's layers and plate structure) (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-plate-tectonics-2031-0.pdf)
- Printed copies of Worksheet 1 (Plate boundaries and geological features) (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-plate-tectonics-2031-1.pdf)
- Printed copies of Worksheet 2 (Plate tectonics processes) (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-plate-tectonics-2031-2.pdf)
- Vocabulary matching worksheet Set 1 (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-plate-tectonics-2031-1.pdf)
- Vocabulary matching worksheet Set 2 (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-plate-

- Present a diagram of Earth's internal structure, explaining the core, mantle, lithosphere, and asthenosphere. (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-plate-tectonics-2031-0.pdf)
- Explain convection currents in the mantle: hot mantle material rises, cools, and sinks, creating circular motion that drives plate movement.
- Describe the three types of plate boundaries: divergent (plates move apart, forming mid-ocean ridges), convergent (plates collide, forming mountains or trenches), and transform (plates slide past each other, causing earthquakes).

(https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-plate-tectonics-2031-1.pdf)

Step 3: Guided Practice (15 minutes)

- Distribute Vocabulary Set 1 and work through the first few terms as a class, ensuring students understand core concepts like lithosphere, asthenosphere, and convection currents. (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-plate-tectonics-2031-1.pdf)
- Use Worksheet 0 to review Earth's layers and identify which parts are solid, liquid, or semi-fluid, and how these properties affect plate movement. (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-plate-tectonics-2031-0.pdf)
- Discuss real-world examples: the San Andreas Fault (transform boundary), the Mid-Atlantic Ridge (divergent boundary), and the Himalayas (convergent boundary).

Step 4: Independent Practice (15 minutes)

feature forms at a convergent boundary between two continental plates?

- Have students classify real-world locations (e.g., the Pacific Ring of Fire, the East African Rift) by plate boundary type and predict the geological activity expected there.

Differentiation Strategies

For advanced learners:

- Challenge students to research a specific tectonic plate (e.g., the Pacific Plate) and create a presentation on its boundaries, movement direction, and associated geological activity.
- Introduce the concept of hotspots (e.g., Hawaii) and how volcanic islands form away from plate boundaries due to mantle plumes.

For learners needing support:

- Provide a labeled diagram of Earth's layers with color-coded sections to help students visualize the structure.
- Offer sentence frames for vocabulary definitions, such as 'A convergent boundary is where two plates _____ and form _____.'.

Extension Activities

- Build a model of a tectonic plate boundary using clay or foam to demonstrate how plates

tectonics-2031-1.pdf)

- Worksheet 2: Plate Tectonics Processes (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-plate-tectonics-2031-2.pdf)
- Vocabulary Set 1: Core Plate Tectonics Terms (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-plate-tectonics-2031-1.pdf)
- Vocabulary Set 2: Plate Boundaries and Features (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-plate-tectonics-2031-2.pdf)

- Vocabulary Set 3: Additional Plate Tectonics Vocabulary (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-plate-tectonics-2031-3.pdf)
- Vocabulary Set 4: Extended Plate Tectonics Terms (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-plate-tectonics-2031-4.pdf)

PREVIEW

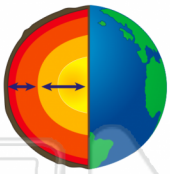
Please Sign In or Sign Up to download the printable version of this worksheet

Plate Tectonics

Sci F

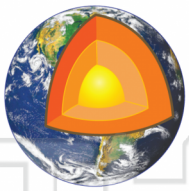
Name_____ Class_____ Date_____

1 The earth's core has two parts, the **inner core** and the **outer core**.
The inner core is _____.



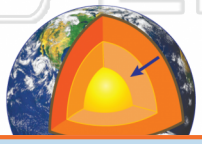
A the liquid layer of the core
B the less dense portion of the core
C solid, and is the densest of earth's layers
D liquid, and is the densest of earth's layers

2 The **Earth's layers** in order from the surface to the center are:



A crust, core, mantle
B crust, mantle, core
C mantle, crust, core
D core, mantle, crust

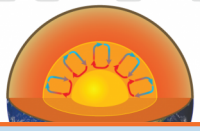
3 The **Earth's core** is primarily composed of _____.



A granite and marble
B nickel and granite
C iron and copper

4 The Earth's outer core is **liquid**, but does **not** have **convection currents**.

True or False?



True

5

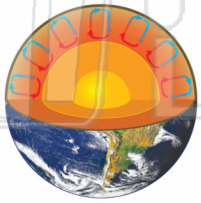
D ionization

7

C quickly, less dense
D slowly, less dense

9 **Hot mantle** near the core can slowly **rise** and become cooler and denser.

True or False?



True
False

10 Which of the following information was ***not*** used to support the theory of **continental drift** proposed in the early 1900s?

A the continents appear to look like puzzle pieces
B similar fossil records from different continents
C similar glacial striations in rocks from different continents
D the existence of volcanic islands

Plate Tectonics

Sci F

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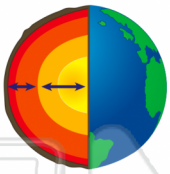

C

2 The **Earth's layers** in order from the surface to the center are:

A crust, core, mantle
B crust, mantle, core
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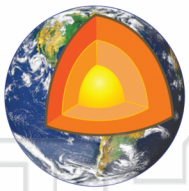

B

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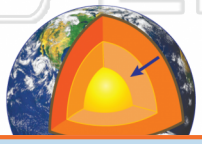

D

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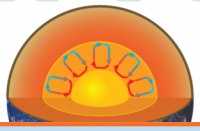

B

5

C

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B

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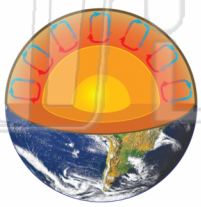
False



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A the continents appear to look like puzzle pieces
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D

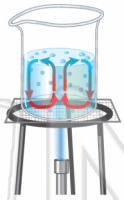
Plate Tectonics

Sci F

Name_____ Class_____ Date_____

1 When a liquid becomes **cooler**, its particles move more _____ and it becomes _____.

A quickly, denser
B slowly, denser
C quickly, less dense
D slowly, less dense



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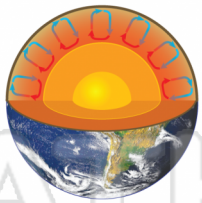

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4 About **180 million years ago**, a large continental **landmass** split into two parts, called _____.

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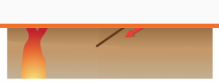
B Gondwana and Pangaea

5

other.
C two continental plates slide past each other.
D two tectonic plates move toward each other.

D a volcanic island



7

9 Approximately _____ years ago, two large landmasses broke apart and began forming the **modern continents**.

A 300 million
B 180 million
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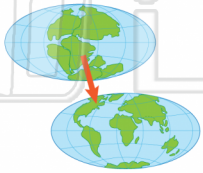

10 New **oceanic crust** is formed by _____.

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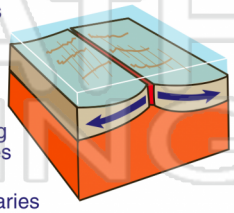

Plate Tectonics

Sci F

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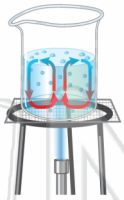

B

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True
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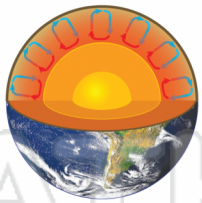

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5

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7

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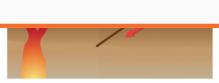
C two continental plates slide past each other.
D two tectonic plates move toward each other.

C

D a volcanic island



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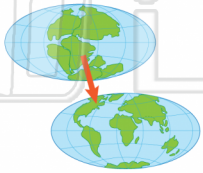

C

10 New **oceanic crust** is formed by _____.

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B sea-floor spreading at mid-ocean ridges
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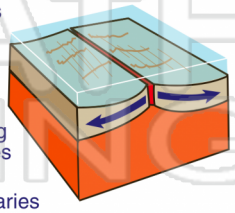


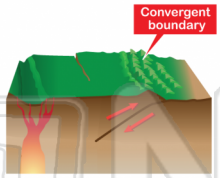
B

Plate Tectonics

Sci F

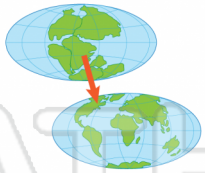
Name_____ Class_____ Date_____

1 What is formed at the **convergent boundary** of two continental plates?



A a fault
B a mid-ocean ridge
C a mountain range
D a volcanic island

2 Approximately _____ years ago, two large landmasses broke apart and began forming the **modern continents**.



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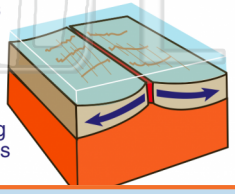


A earthquakes at transform faults
B sea-floor spreading at mid-ocean ridges
C volcanoes at

4 According to the theory of **continental drift**, all of the continents were together as a single large landmass called _____.

A Laurasia
B Gondwana
C Panthalassa

5

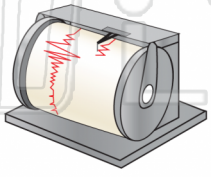
7

C a combination of the mantle and core.
D composed of only the continental crust.

the inner core
D radiation from within the crust

9 **Seismographs** measure **seismic waves** and help scientists learn about the Earth's interior.

True or False?



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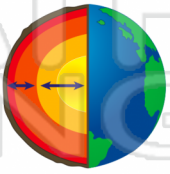

A the liquid layer of the core
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Plate Tectonics

Sci F

Name_____ Class_____ Date_____

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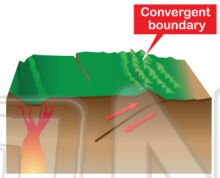

C

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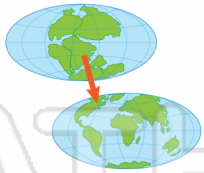

C

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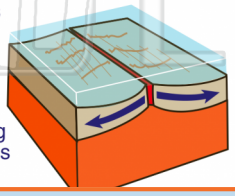

B

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the inner core
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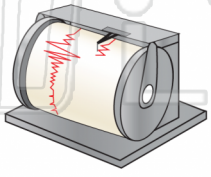

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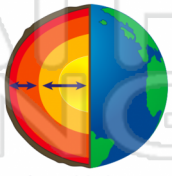


C

Plate Tectonics

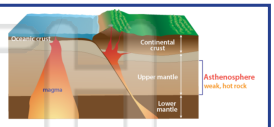
Sci F

Name_____ Class_____ Date_____

Match each of the following terms to its definition:

Convection currents	Continental drift	Convergent boundary	Convection
Asthenosphere	Core	Conduction	Continental crust

1. - the weaker, upper portion of the Earth's mantle



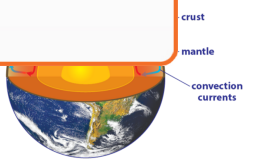
2. - the transfer of heat energy within a material due to temperature gradients

3. the co

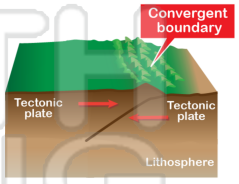
4. mantle

5. of cur

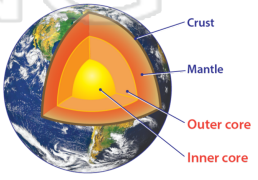
6. by the temperature and density



7. - a boundary where two tectonic plates move toward each other



8. - the dense innermost layer of the Earth composed of nickel and iron



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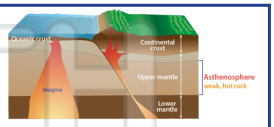
Name_____ Class_____ Date_____

Match each of the following terms to its definition:

Convection currents	Continental drift	Convergent boundary	Convection
Asthenosphere	Core	Conduction	Continental crust

1. asthenosphere - the weaker, upper portion of the Earth's mantle



2. conduction - the transfer of heat energy within a material due to temperature gradients

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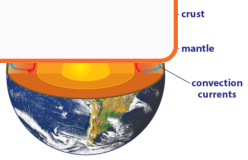
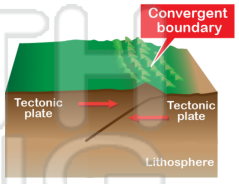
temperature and density



7. convergent boundary - a boundary where two tectonic plates move toward each other



8. core - the dense innermost layer of the Earth composed of nickel and iron

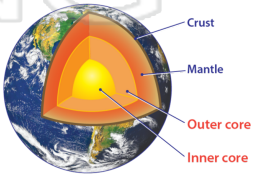


Plate Tectonics

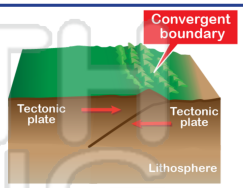
Sci F

Name_____ Class_____ Date_____

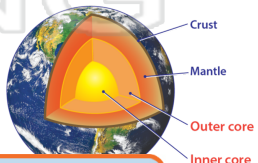
Match each of the following terms to its definition:

Convergent boundary	Divergent boundary	Crust	Gondwana
Lithosphere	Laurasia	Core	Mantle

1. - a boundary where two tectonic plates move toward each other



2. - the dense innermost layer of the Earth composed of nickel and iron



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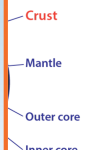

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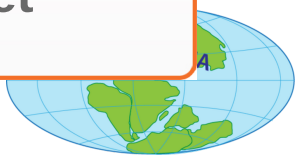
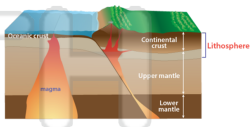


7. - the combination of the crust and the rigid, uppermost mantle that moves as a unit; divided into tectonic plates



8. - the middle layer of the Earth found between the crust and the core; composed of hot solid rock

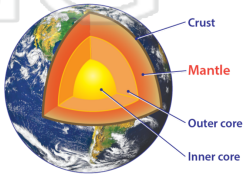


Plate Tectonics

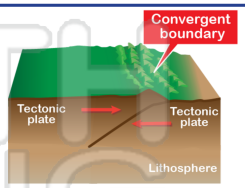
Sci F

Name_____ Class_____ Date_____

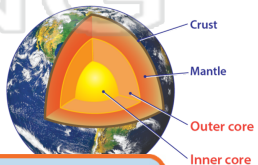
Match each of the following terms to its definition:

Convergent boundary	Divergent boundary	Crust	Gondwana
Lithosphere	Laurasia	Core	Mantle

1. convergent boundary - a boundary where two tectonic plates move toward each other



2. core - the dense innermost layer of the Earth composed of nickel and iron



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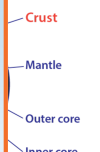

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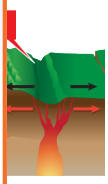

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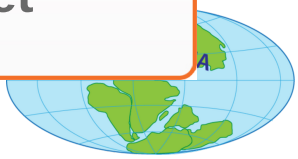
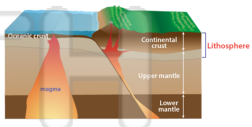


7. lithosphere - the combination of the crust and the rigid, uppermost mantle that moves as a unit; divided into tectonic plates



8. mantle - the middle layer of the Earth found between the crust and the core; composed of hot solid rock